

terminal line. A yellow and then a black line on fringes, beyond which they are gray, cut with brown. Beneath uniform smoky brown.

Expands, 1.00-1.16 inches = 25-29 mm.

*Habitat.* — Santa Rita Mts., Arizona, 5,000-8,000 feet, in June; F. H. Snow.

Two males and two females in good condition from Prof. Snow. The species is allied to *clientis* in the position of the black apical spot; but it is smaller, the vestiture is rough, the maculation much more obvious and diffuse, the s. t. line on secondaries is much more prominent and courses of all the lines differ obviously when compared. The smaller size, rougher vestiture and more conspicuous markings are the easily recognizable features.

---

## EASTERN AND CENTRAL EUPITHECIAS.

RICHARD F. PEARSALL,

BROOKLYN, N. Y.

With our *Eupithecias*, especially the eastern forms, there has heretofore been no systematic attempt to separate the species. In an effort to do so my first aim was to gather material in large quantity and to separate it into species, regardless of name. Following this the application of names of described species to some of the forms required long study and patient discrimination, and while some problems remain unsolved, the long series of commoner forms in my own collection serve to establish these names beyond any doubt in my own mind. Even the elusive *miserulata* has been ferreted out by this method. The result leaves a number of forms, which cannot be included under the old names, and some of them are described in this paper; others still remain in abeyance, represented by single examples whose status will not be clear until better specimens are at hand.

### ***Eupithecia mutata*, new species.**

Expanse 19 mm. Palpi long, rather heavy, dark brownish, tipped with white. Antennæ in ♂ flattened, strongly ciliate, in ♀ flattened, almost simple. Head and thorax dark brownish gray. Wings whitish leaden, shaded with dark gray or dark brown and rust-red scales, the latter forming a band across fore wings, within basal area, which is frequently wanting or replaced by a leaden gray band, and another, always present with more or less distinctness just outside extradiscal geminate pale line. Basal line fine, of black scales, near to origin of wing, turning sharply outward at

costa, thence curving inward to base of wing at inner margin and having at subcostal an outward point. This line is often absent, and is followed by a broad dusky or rust-red band, outside which runs a geminate pale line, similar to that outside extradiscal, starting onethird out from costa, extending toward discal dot, then rounding at right angle, running across wing, slightly turning toward base, and generally with an outward point at vein one. The outer boundary of this line, which becomes the discal line, is narrowly shaded with black in discal space, except at costa where it becomes heavy and broad, filling the angle above geminate line but not enveloping the discal dots as in *albicapitata*. Discal space darkened costally by dark gray scales, or in highly colored examples by dark red-brown. Extra discal line black, two thirds out, crossing to subcostal in straight line, with a small outward curve at vein seven, and another larger rounded sweep opposite cell beneath which, after a slight curve toward base, it proceeds straight across to inner margin. This line is continuous, not broken into dots as in *ablicapitata*, heavily shaded with black at costa and within discal space, and having points of black inwardly at veins. Beyond this the usual pale geminate line runs parallel to it, succeeded by the broad reddish band, which is outwardly limited by the well defined, subterminal whitish line, strongly waved between veins, angulate toward costa. Subterminal space dark gray. Fringes long, heavy, pale gray to dusky, faintly clouded at end of veins. Terminal line black, distinct, widely cut, with white between veins. Discal dots large, oval, jet black, oblique. Hind wings in color same as fore wings, black within basal line. Between this and extradiscal are two dusky straight lines, the first of which includes discal dot, which is small, somewhat obscure, linear, and nearer base of wing than usual. Extradiscal leaves costa with broad outward scallop, rounds cell with a second larger sweep, turns sharply and runs straight to inner margin nearly two thirds out, with a wide shading of black or dusky scales along internal edge. The geminate, pale lines follow it externally, with a narrow dusky shade line beyond these, which is outwardly bordered with the angulate, whitish, subterminal line, as on fore wings. Subterminal space and fringes paler. Terminal line as on fore wings. Beneath silvery gray, with dusky lines reproducing those above, the extradiscal, and broad shade line, following the geminate pale lines, being especially marked, as also the subterminal space at apex. Terminal line as above, fringes paler. Discal dots on fore wings large, black, lineate or oval on hind wings, crescentic, heaviest above, running to a point below, turned outward. Abdomen above dark gray, with a mixture of white and brownish scales. Second segment bright reddish chestnut; beneath whitish, paler at tip. Body and legs silvery gray, the latter with fore tibiae and all tarsi heavily marbled and ringed with dark brown.

*Type*. — ♂ and ♀ taken in Big Indian Valley, Catskill Mts., N. Y., the former June 22, 1905, the latter July, 3, 1906, and eight cotypes in author's collection.

This species has caused not a little confusion. In size and shape it resembles *latipennis*, and a specimen he received from Mr. Hanham, was placed by Dr. Hulst, as the type of that species, in the collection of the Brooklyn Institute Museum. Later, when the true type of *latipennis* was discovered in the Hulst collection at New Brunswick,

it was, for the sake of designation called *albicapitata* Pack., and while its markings and colors resemble that species in size it is fully one third larger. In none of my examples are the discal spots merged with the costal blotch, and the extra discal in *albicapitata* runs straight from costa around cell where it breaks into dots. The latter is a rare species but I have five good examples for comparison. The type ♂ is rather highly colored, and the ♀ nearly normal in that respect. I have placed it under *Eupithecia*, but four of my examples have the double accessory cell characteristic of *Eucymatoge*, yet in the majority it is single, in one instance two in one wing and one in the other. In coloration it comes near to *Eucymatoge togata*, the European type of the genus, but through the kindness of Mr. L. B. Trout, I have received six examples of that rather rare species, and I find that, while superficially the resemblance is great, the arrangement of colors is different, and there seems to be a constant feature in the course of extra discal line below cell. In *mutata* it runs direct to inner margin, while in *togata* there is in all my specimens, a sharp inward angle at vein one, with a tendency toward union with discal line along this vein. I surmise that a highly colored example of *mutata* has caused Mr. Taylor in his recent List of British Columbia Lepidoptera, to include *togata* therein.

***Eupithecia intimata*, new species.**

Expanse 18 mm. Palpi long, of dark and pale gray scales, mixed. Front, vertex, thorax and abdomen above clothed with same, the latter having a ring of soiled white at base. All rings above a uniform pale ashen gray. A number of narrow wavy darker shade lines cross fore wing, from base to intradiscal line, which is broad and dusky at costa, where it turns toward discal dot, fading rapidly and becoming narrow as it proceeds in wavy line, straight to inner margin. Above discal dot, which is linear and jet black, there is a broad pale space on costa, which, extending across wing, fills the discal space and is traversed centrally by one or two very narrow, wavy dusky lines hardly discernible. This space is bounded outwardly by the dusky, extradiscal shade line, which starts from a dark spot at costa, rounds outward opposite cell, thence inclining toward base, reaches inner margin in two broad waves, having inward points on veins 1 and 2. The usual parallel pale line succeeds this outwardly and is not very distinctly marked. Subterminal space very slightly darkened, the white central line, usually present, is discernible only in a few pale scales, chiefly at apex and at anal angle. Hind wings hardly paler than fore wings. All the lines, faint at inner margin, fade out centrally, and the pale line preceding subterminal space is traceable only by a darkening of this space. A cluster of dark gray scales at anal angle. Discal dots faint, linear. Terminal lines on all wings dark gray, not clearly defined; fringes ash-gray, cut with dark gray at veins. Beneath dusky ashen, the pale discal space and line reproduced as above on fore

wings, while on hind wings, the diffuse, faint, dusky, basal extradiscal and subterminal rounded lines are clearly traceable across wing. Within basal line the wing is dusky, clearer beyond, with discal dots on all wings faint, linear. Body beneath silvery white, the legs and abdomen beneath with a sprinkling of gray scales, the latter somewhat darker at tip.

*Types.* — ♂ and ♀ taken by Mr. Wm. Beutenmüller in the Black Mts., N. C., on August 12 and July 24, 1906, respectively, are in the collection of the Am. Mus. of Nat. History. The ♂ is in poor condition, but was so designated in order to establish its structural characters — the ♀ being perfect.

This species is near to *conformata* Pears., but is larger, the male antennæ are heavier and more strongly ciliate, the wings longer, and more produced at apices. The discal dots are linear, and farther out from base, and the markings less distinct.

***Eupithecia affinata*, new species.**

Expanse 13 mm. Palpi very short, barely visible beyond the front, jet black, tipped with cinereous. Fore wings sharper at apices, otherwise much resembling *coagulata* Gueuse, with color above including front, vertex, thorax and abdomen, a uniform cinereous, darkest along costa and subterminally. A dusky band crosses thorax in front, and the second segment of abdomen is jet black. Four costal blotches are the beginning of faint broken lines of black scales across fore wings, the two jet black central ones on either side of the discal dot quadrate and larger. Basal area small, blackened, outlined sharply outward at costa, retreating toward base at inner margin. Intradiscal faint, apparently running straight across wing, with slight outward curve at costa. Extradiscal from costal blotch outward to vein six, then angled sharply and inclined toward base, runs straight to inner margin, followed by parallel pale line which is outwardly defined by the darkened subterminal shade only. This is traversed by a fine, faint, wavy, continuous pale line, running nearer to outer margin than usual. Terminal line black, broken between veins. Fringe on all wings ashen, darker at ends of veins. Discal dots jet black, round, rather large. Hind wings with lines from base to extradiscal, showing only at inner margin, the latter being shadowy but continuous across wing, ring outward at cell and nearly parallel to outer margin. This is succeeded by the broad pale line defined outwardly by a shadowy subterminal line, rather more clearly than in fore wings. Discal dots smaller than on fore wings but distinct. Beneath dusky ashen, the intra- and extradiscal lines repeated more definitely than above, on both wings, the latter especially, which has at costa a large black blotch. The succeeding pale line, broad and distinct on both wings, is followed by a dusky shade line darkened at costa. Discal dots as above but fainter. Body beneath, and abdomen for half its length beneath silvery white, tip darker. Legs missing. Antennæ rather heavy for size, flattened, well ciliated.

*Type.* — ♀ in author's collection, taken at New Brighton, Pa., August 15, 1907, received through the kindness of Mr. F. A. Merrick.

This species could be readily mistaken for a small *coagulata* but the round discal dots, short palpi, and sharper wing at once distinguish it.

**Eupithecia cimicifugata, new species.**

Expanse 18-19 mm. Palpi moderate, stout, loosely scaled. Fore wings broad, rounded at apices and on outer margin, much as in *latipennis*. Hind wings with margin flattened between veins two and six. Vertex soiled white; front, thorax and wings a soft gray inclining to a faint glossy bronze in some examples, due to the presence of intermingled metallic coppery scales. No black markings. On fore wings the lines are of dark brown scales which also form obscure clusters along costa, the heaviest being just beyond discal dot, at inception of extradiscal line. All lines diffuse shadowy; the basal appears to leave costa with a slight outward curve, thence straight to inner margin. Extradiscal rounds outward about cell with a very slight angle near costa, then with basal inclination reaches inner margin, two thirds out, much after the pattern of *palpata*. Following it, the usual geminate pale line has its central dividing line broader than usual. A dark shade line beyond this is outwardly defined by the whitish, slightly waved, but continuous subterminal line, between which and margin the wing is paler. Terminal line dark brown, diffuse, broken between veins, and seems to cover the fringe basally, except at ends of veins, where it is cut with whitish scales. Terminally the fringe is pale silky gray. Discal dots small, dark brown, barely visible in some examples. Hind wings with no definite markings. The pale geminate line, with its bordering of darker scales running parallel with outer margin, can be traced faintly. Discal dots as on fore wings, but minute. Beneath soiled white, with subterminal shade line and extradiscal line on all wings well defined, leaving the broad pale line very conspicuous. Within the extradiscal to base, the wing is dusted with dark brown scales, which sometimes gather into a faint basal line, and always become thin about discal points, causing these to appear more prominent than above and somewhat linear. Abdomen above silvery gray at base, the second segment a rich chestnut-brown with a slight coppery tinge, terminally dark brown, mixed with gray scales, the segments dusky white anteriorly. Beneath white, the tip sooty brown. Body beneath, and legs soiled grayish white.

*Type*. — ♀ No. 11880, U. S. Nat. Museum, bears label thus: "Larvæ bore in fruit racemes of Black Snakeroot (*Cimicifuga racemosa*). Cabin John, Maryland, issued June 15, 1900." Type ♂ in author's collection, taken by Mr. H. D. Merrick, New Brighton, Pa., August 31, 1904. Cotypes: two ♀♀ in author's collection and one ♀ with Mr. L. W. Swett, Malden, Mass., all captured in Pennsylvania.

The range of color in this species has given me some trouble. The type ♀ is more gray than examples seen later, and as the above are all I have been able to assemble, it must be of rare occurrence.

**Eupithecia cocoata, new species.**

Expanse 22 mm. Palpi long, rough, scaled. Antennæ flattened, rather stout, ciliate. Head and entire upper surface of body and wings a uniform chocolate-brown, the costa barred with paler streaks, which are beginnings of narrow, pale, indefinite, wavy lines across fore wings. The most prominent of these are from a twin spot, turning outward and enclosing discal dot, and running thence in a broad wave straight to inner margin. The pale line usually succeeding extradiscal is also present, geminate across costa, then coalescing and becoming indistinct, curved strongly outward at costa, not angled; inclined basally with a large curve between veins one and two, it reaches inner margin three fourths out. The white line usually traversing subterminal space is absent, showing only in a cluster of pale scales at anal angle. Discal dots moderately large, oval, jet black, outwardly bordered with a few white scales. Fringes on all wings same color as upper surface, slightly darkened opposite veins. Terminal line dark chocolate-brown, interrupted between veins. Hind wings showing continuance of pale line succeeding extradiscal, otherwise unmarked except along inner margin, where they are shortly barred with dark brown, and at anal angle, where scattering dark brown scales are contiguous to a conspicuous white lunate spot. Discal dots round, small, dark brown. Beneath whitish, thickly sprinkled with brown scales, showing a discal, extradiscal and broad subterminal shade lines, in darker tints, all heavier at costa. The pale lines as indicated above, also clearer white. The hind wings basally are crossed with narrow wavy pale lines, and the subterminal shade line is blackened at anal angle. Discal dots as above, but all dark brown. Abdomen beneath with white scales. Fore legs dark brown, the tarsi banded with paler. Middle and hind legs whitish.

*Type*. — One ♂ in U. S. Nat. Museum, taken at Plummer's Island, Maryland, probably in June.

This species differs from *meritata* Pear. in color, in the absence of black lines or veinings, in its stouter, more heavily ciliate antennæ and longer palpi.

---

**NEW WESTERN TENTHREDINIDÆ.\***

BY S. A. ROHWER,

BOULDER, COLO.

**1. *Bactroceros pugnax*, new species.**

*Female*. — Length 9.5 mm.; length of anterior wing 8 mm. Robust. Head almost as wide as thorax, polished, without punctures; face not very strongly margined and not as perpendicular as in *Bactroceros luteicornis* Nort.; posterior angles of head rounded; clypeus rounded at sides, rather truncate across middle; middle carina extending on basal half of clypeus; middle carina divides above antennæ

---

\*The writer wishes to express his thanks to Prof. C. P. Gillette and Mr. H. S. Smith for the loan of material and to Prof. T. D. A. Cockerell for many favors. Unless otherwise stated, the types are in the author's collection.